Title (en)

Method for catalytic methanisation and methanisation system

Title (de)

Verfahren zum katalytischen methanisieren und methanisierungsanlage

Title (fr)

Procédé de méthanisation catalytique et installation de méthanisation

Publication

EP 2682450 A3 20140409 (DE)

Application

EP 13003153 A 20130620

Priority

DE 102012013258 A 20120703

Abstract (en)

[origin: EP2682450A2] The process comprises supplying an electrical energy in a first mode to a source of hydrogen to produce hydrogen, and supplying thermal energy to a carbon dioxide source (2) to produce carbon dioxide. In the first mode, a part of the supplied thermal energy is produced by partial conversion of a part of the supplied electric energy. A further part of the thermal energy is provided by heat generated in a catalytic methanation and/or a production of hydrogen process. The thermal energy is supplied to different collectors with different temperature levels. The process comprises supplying an electrical energy in a first mode to a source of hydrogen to produce hydrogen, and supplying thermal energy to a carbon dioxide source (2) to produce carbon dioxide. In the first mode, a part of the supplied thermal energy is produced by partial conversion of part of the supplied electric energy. A further part of the thermal energy is provided by heat generated in a catalytic methanation and/or a production of hydrogen process. The thermal energy is supplied to different collectors with different temperature levels. The further part of the thermal energy is provided to a first temperature level, and the electrical energy is provided to a second temperature level higher than the first temperature level. The further part of the thermal energy is provided to a third temperature level, and the electrical energy is provided to a fourth temperature level higher than the third temperature level. The fourth temperature level is equal to the first temperature level. A change between the first and second modes is carried out for one day. The carbon dioxide source comprises a raw biogas separator for separating the carbon dioxide, an amine scrubber, and a biogas plant (15). The thermal energy is supplied, to the collector, from the separator, the amine scrubber, primary fermenters, secondary fermenter and/or sanitization of the biogas plant. A methane-rich product gas is generated as a signal by the separator, and is fed into an existing gas network (20). The thermal energy is supplied in the second mode by combustion of a fuel gas, production of the raw biogas from the biogas plant and/or bio-methane from a biogas processing plant. An independent claim is included for a methanation system.

IPC 8 full level

C10L 3/08 (2006.01); **C07C 1/12** (2006.01)

CPC (source: EP)

C07C 1/12 (2013.01); **C10L 3/08** (2013.01); **C25B 1/04** (2013.01); **C25B 15/081** (2021.01)

Citation (search report)

- [X] DE 102009018126 A1 20101014 - ZSW [DE]
- [XI] DE 202011005536 U1 20110808 - DAHL TORSTEN [DE]
- [A] US 2011041740 A1 20110224 - REILLY TIMOTHY J [US]
- [AP] EP 2540388 A1 20130102 - SOLARFUEL GMBH [DE]

Cited by

EP2965800A1; US9919982B2; WO2021239831A1; WO2018099709A1; US11655421B2; US11712652B2; WO2018112654A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

EP 2682450 A2 20140108; **EP 2682450 A3 20140409**; **EP 2682450 B1 20180808**; DE 102012013258 A1 20140109; DK 2682450 T3 20181029; ES 2683885 T3 20180928; PT 2682450 T 20181116

DOCDB simple family (application)

EP 13003153 A 20130620; DE 102012013258 A 20120703; DK 13003153 T 20130620; ES 13003153 T 20130620; PT 13003153 T 20130620